

network device features a remote monitor and speakers which directly display the visual and audio display of the main computer, and in which the device features a remote input platform for sending instructions directly to the main computer.

Computers are becoming more popular as home entertainment devices and for the organization and display of information for the consumer. In addition to the functions of earlier computers, computers today can play music stored in a variety of formats, including files stored in the MP3 format on a CD, on magnetic storage medium or on the DVD storage medium, as well as displaying video streams and enabling "chats" to take place through the Internet. In addition, consumers can now perform a variety of tasks "on-line" through the computer, such as order groceries from the local supermarket, which are then delivered to the house of the consumer. These applications have the advantage of being more efficient and of saving the consumer time.

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The computer itself has been sufficiently adapted for the household environment and for the new multi-media tasks, except for portability. The typical household computer is a "desktop" computer which is not very portable. However, certain applications such as playing and managing a musical database or otherwise interacting with the computer from a remote location would be more efficient if the computer could easily be moved from room to room. Thus, desktop computers are not sufficiently portable for such tasks.

A more useful solution would enable the consumer to view the display of the monitor of the computer and to interact with the computer anywhere in the house, as a remote application. The entire computer would not need to be moved about from room to room, but only those portions which are required for controlling the computer and for displaying information on the monitor. Unfortunately, those remote computing solutions which are available only enable partial control, and do not permit portions of the computer to be operated in a fully

remote and independent fashion, while still remaining tied to the CPU of the computer but without an additional network connection.

Therefore, there is an unmet need for, and it would be highly useful to have, a device for remote display of information on a monitor and for remotely controlling a computer, as though the user was in physical proximity to the computer.

SUMMARY OF THE INVENTION

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The present invention is of a device for remotely displaying the audiovisual information of a main computer and for remotely and fully controlling the functions of the main computer. The device of the present invention includes a remote A/V (audiovisual) display device and a remote input platform. The remote input platform has a radio transmitter and the remote A/V display device has a radio receiver for communicating with the main computer, which is in communication with the corresponding radio transmitter and radio receiver. The main computer sends audiovideo signals through the radio transmitter for displaying information, preferably in the form of a GUI (graphical user interface), on the remote A/V display device. Preferably, the information also includes streaming video and/or graphics. Similarly the main computer receives input instructions by the radio receiver from the user through the remote input platform. Only the main computer has a CPU, although either or both of the remote A/V display device and the remote input platform may have a microprocessor or other processor. Thus, the portions of the computer with which the user directly interacts, the display device and the input platform, can be remote devices, potentially physically separated from the main portion of the main computer (including the CPU).

According to the present invention, there is provided a remote display device for remote interaction by a user with a main computer, the main computer

being in communication with a main transmitter and a main receiver, the main computer featuring a local video card and the main computer featuring a local input port for receiving input instructions, the device comprising: (a) a remote display device for receiving display signals directly from the local video card through the main transmitter and for displaying a display to the user, the display being at least a visual display, the remote display device featuring a remote receiver for receiving the display signals; and (b) a remote input platform for receiving input data from the user and for transmitting the input data directly to the local input port of the main computer through the main receiver, the remote input platform featuring a remote transmitter for transmitting the input data to the main receiver; such that the device lacks a CPU (central processing unit) and such that only the main computer has the CPU.

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According to another embodiment of the present invention, there is provided a system for remote interaction with a user, comprising: (a) a main computer, the main computer featuring a CPU, the main computer comprising: (i) a main radio transmitter for transmitting radiowaves and a main receiver for receiving radiowaves; (ii) a plurality of video cards, including at least a first video card being locally connectable; and (iii) an operating system capable of controlling the plurality of video cards substantially simultaneously; (b) a remote display device for receiving display signals from a second of the plurality of video cards through the main transmitter of the main computer and for displaying a visual display to the user, the remote display device featuring a remote radiowave receiver for receiving the display signals, the remote display device lacking a CPU; and (c) a remote input platform for receiving input data from the user and for transmitting the input data to the main computer, the remote input platform featuring a remote radiowave transmitter for transmitting the input data, the remote input platform lacking a CPU.

Hereinafter, the term "computing platform" refers to a particular computer hardware system or to a particular software operating system. Examples of such hardware systems include, but are not limited to, personal computers (PC), palmtops, handheld computers, MacintoshTM computers, mainframes, minicomputers and workstations. Examples of such software operating systems include, but are not limited to, UNIX, VMS, Linux, MacOSTM, DOS, one of the WindowsTM operating systems by Microsoft Inc. (Seattle, Washington, USA), including Windows NTTM, Windows 3.xTM (in which "x" is a version number, such as "Windows 3.1TM"), Windows CETM, Windows95TM, and Windows98TM, as well as any suitable operating system for embedded units or palmtop/handheld type computers.

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For the present invention, a software application could be written in substantially any suitable programming language, which could easily be selected by one of ordinary skill in the art. The programming language chosen should be compatible with the computing platform according to which the software application is executed. Examples of suitable programming languages include, but are not limited to, C, C++ and Java.

In addition, the present invention could be implemented as software, firmware or hardware, or as a combination thereof. For any of these implementations, the functional steps performed by the method could be described as a plurality of instructions performed by a data processor.

Hereinafter, the term "CPU" (central processing unit) includes those portions of the computer which control the remainder of the computer, including the peripherals. As defined herein, the CPU includes the control unit and the arithmetic and logic unit (ALU), as well as other components such as memory and temporary buffers which are required for the operation of the control unit and the ALU. Other types of microprocessors or data processors are specifically excluded from the term "CPU" as herein defined.

Hereinafter, the term "speaker" is defined to include any type of device for producing an audible sound stream for a user, including an earphone.

Hereinafter, a "locally connectable" video card is a video card which is capable of controlling a monitor or other display device which is attached to the computer in which the video card is located, regardless of whether the computer actually has such a monitor or other display device attached.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention is herein described, by way of example only, with reference to the accompanying drawings, wherein:

FIG. 1 is a schematic block diagram illustrating an exemplary device and system according to the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

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The present invention is of a device for remotely displaying information from a monitor of a main computer and for remotely and fully controlling the main computer. The device of the present invention includes a remote A/V display device and a remote input platform. The remote input platform has a radio transmitter and the remote A/V display device has a radio receiver for communicating with the main computer, which is in communication with a corresponding radio transmitter and a corresponding radio receiver. The main computer sends audio and video signals through the radio transmitter for displaying information, preferably in the form of a GUI (graphical user interface), on the remote A/V display device. Preferably, the information also includes streaming video and/or graphics, as well as streaming sound.

Similarly, the main computer receives input instructions by the radio receiver from the user through the remote input platform. Only the main computer has a CPU, although either or both of the remote A/V display device and the